

FCC/ISED

EMC

TEST REPORT

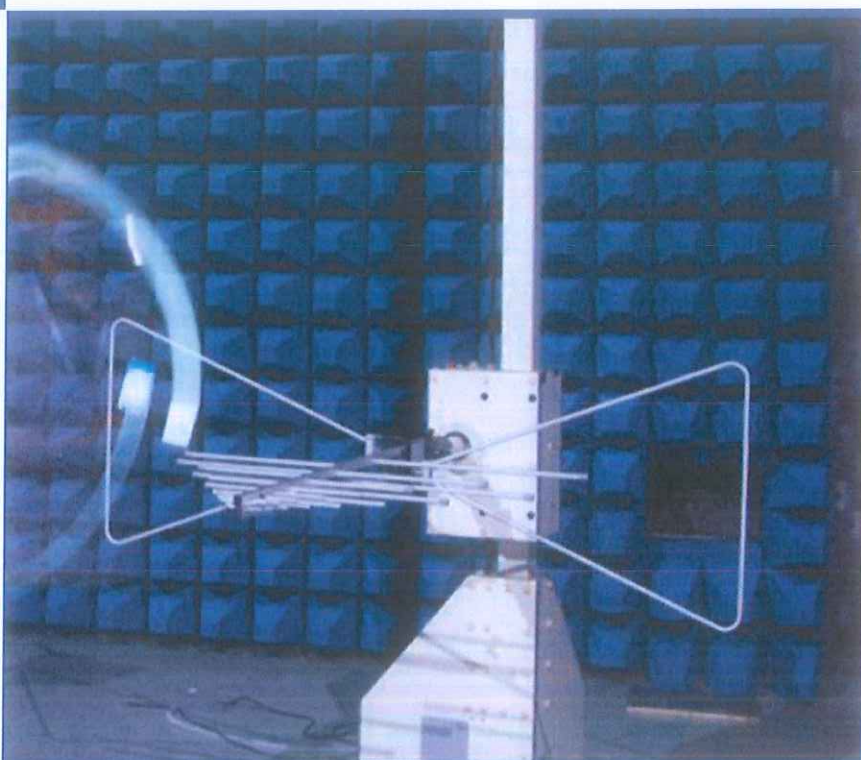
ISSUED BY
Shenzhen BALUN Technology Co., Ltd.



FOR
Smart Phone

ISSUED TO
Shenzhen UniStrong Science & Technology Co.,Ltd.

B, 4-4Factory, Zhengcheng Road, FuyongBaoan District, Shenzhen, China.



Tested by: Xia Long
Xia Long
(Engineer)
Date: Mar. 20, 2018

Approved by: Wei Yanquan
Wei Yanquan
(Chief Engineer)
Date: Mar. 20, 2018



Report No.: BL-EC17C0360-401
EUT Name: Smart Phone
Model Name: UT10
Brand Name: UniStrong
Test Standard: 47 CFR Part 15 Subpart B
ICES-003 (Issue 6, January 2016)

Test Conclusion: Pass
Test Date: Feb. 20, 2018 ~ Mar. 02, 2018
Date of Issue: Mar. 20, 2018

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Revision History

Version	Issue Date	Revisions Content
<u>Rev. 01</u>	<u>Mar. 06, 2018</u>	<u>Initial Issue</u>
<u>Rev. 02</u>	<u>Mar. 20, 2018</u>	<u>Updated ancillary equipment information.</u>

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1 GENERAL INFORMATION

1.1 Identification of the Testing Laboratory

Company Name	Shenzhen BALUN Technology Co.,Ltd.
Address	Block B, 1st FL, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China
Phone Number	+86 755 6685 0100
Fax Number	+86 755 6182 4271

1.2 Identification of the Responsible Testing Location

Test Location	Shenzhen BALUN Technology Co.,Ltd.
Address	Block B, 1st FL, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China
Accreditation Certificate	The laboratory has been listed by Industry Canada to perform electromagnetic emission measurements. The recognition numbers of test site are 11524A-1. The laboratory is a testing organization accredited by FCC as a accredited testing laboratory. The designation number is CN1196. The laboratory is a testing organization accredited by American Association for Laboratory Accreditation(A2LA) according to ISO/IEC 17025.The accreditation certificate is 4344.01. The laboratory is a testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L6791.
Description	All measurement facilities used to collect the measurement data are located at Block B, FL 1, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China 518055

1.3 Laboratory Condition

Ambient Temperature	20 to 25°C
Ambient Relative Humidity	45% - 55%
Ambient Pressure	100 kPa - 102 kPa

1.4 Announce

- (1) The test report refer to the BALUN report mode v1.1.
- (2) The test report is invalid if not marked with the signatures of the persons responsible for preparing and approving the test report.
- (3) The test report is invalid if there is any evidence and/or falsification.
- (4) The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein.
- (5) This document may not be altered or revised in any way unless done so by BALUN and all revisions are duly noted in the revisions section.
- (6) Content of the test report, in part or in full, cannot be used for publicity and/or promotional purposes without prior written approval from the laboratory.

2 PRODUCT INFORMATION

2.1 Applicant Information

Applicant	Shenzhen UniStrong Science & Technology Co.,Ltd.
Address	B, 4-4Factory, Zhengcheng Road, FuyongBaoan District, Shenzhen, China

2.2 Manufacturer Information

Manufacturer	Shenzhen UniStrong Science & Technology Co.,Ltd.
Address	B, 4-4Factory, Zhengcheng Road, FuyongBaoan District, Shenzhen, China

2.3 Factory Information

Factory	Shenzhen UniStrong Science & Technology Co.,Ltd.
Address	B, 4-4Factory, Zhengcheng Road, FuyongBaoan District, Shenzhen, China

2.4 General Description for Equipment under Test (EUT)

EUT Name	Smart Phone
Model Name Under Test	UT10
Series Model Name	N/A
Description of Model name differentiation	N/A
Hardware Version	UT10_V104
Software Version	UT10_V1.0
Dimensions (Approx.)	N/A
Weight (Approx.)	N/A
Network and Wireless connectivity	2G Network GSM/GPRS/EDGE 850/900/1800/1900 MHz 3G Network WCDMA/HSDPA/HSUPA Band 1/2/5/8, 4G Network FDD LTE Band 1/2/3/4/5/7/8/17/20/28 TDD LTE Band 38/40/41 CDMA2000 800 MHz Bluetooth, WIFI, GPS, GLONASS, NFC, BDS

Note: The EUT's back cover has two specifications, one without adding a magnet, one with added magnet. Both covers were tested in this report. Only the worst test data under the back cover is attached to this report, namely the back cover with magnet.

2.5 Ancillary Equipment

Ancillary Equipment 1	Battery	
	Brand Name	SJYEnergy
	Model No.	BA7800
	Serial No.	N/A
	Capacity	8000 mAh
	Rated Voltage	3.8 V
	Limit Charge Voltage	4.35 V
Ancillary Equipment 2 ^{Note}	Adapter	
	Brand Name	N/A
	Model No.	ASUC71w-050912300
	Serial No.	ASUC71z-050912300 (z= a, e, i, w)
	Rated Input	100-240 V~, 0.7 A, 50/60 Hz
	Rated Output	5 V= 3 A or 9 V= 2 A or 12 V= 1.5 A
Ancillary Equipment 3	USB Cable	
	Length (Approx.)	1.0 m
Note: All adapter are same with electrical parameters and internal circuit structure, but only differ in model name and plug type. Adapter ASUC71w-050912300 was tested in this report.		

2.6 Technical Information

Note: Not applicable.

3 SUMMARY OF TEST RESULTS

3.1 Test Standards

No.	Identity	Document Title
1	FCC 47 CFR Part 15 Subpart B (10-1-16 Edition)	Unintentional Radiators
2	ICES-003 (Issue 6, January 2016)	Information Technology Equipment (Including Digital Apparatus) — Limits and Methods of Measurement
3	ANSI C63.4-2014	American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz

3.2 Verdict

No.	Description	FCC Rule	ISED Rule	Test Verdict	Result
1	Radiated Emission	15.109	ICES-003 6.1	Pass	Annex A .1
2	Conducted Emission, AC Ports	15.107	ICES-003 6.2	Pass	Annex A .2

3.3 Test Uncertainty

The following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

Measurement	Value
Conducted emissions (9 kHz-30 MHz)	3.23 dB
Radiated emissions (30 MHz-1 GHz)	4.30 dB
Radiated emissions (1 GHz-18 GHz)	4.81 dB
Radiated emissions (18 GHz-40 GHz)	5.71 dB

4 GENERAL TEST CONFIGURATIONS

4.1 Test Environments

Environment Parameter	Selected Values During Tests			
	Temperature	Voltage	Relative Humidity	Ambient Pressure
Normal Temperature, Normal Voltage (NTNV)	23°C~26°C	AC 120 V/60 Hz or DC 3.8 V from battery	50%-55%	100 to 102 kPa

4.2 Test Equipment List

Radiated Emission Test For Frequency Below 1 GHz						
Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due	Use
EMI Receiver	ROHDE&SCHWA RZ	ESRP	101036	2017.06.22	2018.06.21	☒
Test Antenna- Bi-Log	SCHWARZBECK	VULB 9163	9163-977	2016.07.19	2018.07.18	☒
Test Antenna- Horn	SCHWARZBECK	BBHA 9120D	9120D-1600	2016.07.12	2018.07.11	☐
Anechoic Chamber	RAINFARD	9m*6m*6m	N/A	2017.02.21	2019.02.20	☒

Radiated Emission Test For Frequency Above 1 GHz						
Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due	Use
EMI Receiver	KEYSIGHT	N9038A	MY53220118	2017.11.16	2018.11.15	☒
Test Antenna- Bi-Log	SCHWARZBECK	VULB 9163	9163-624	2017.07.22	2019.07.21	☐
Test Antenna- Horn	SCHWARZBECK	BBHA 9120D	9120D-1148	2016.07.12	2018.07.11	☒
Anechoic Chamber	RAINFORD	9m*6m*6m	N/A	2017.02.21	2019.02.20	☒

Conducted Emission Test						
Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due	Use
EMI Receiver	ROHDE&SCHWA RZ	ESRP	101036	2017.06.22	2018.06.21	☒
LISN	SCHWARZBECK	NSLK 8127	8127-687	2017.06.22	2018.06.21	☒
LISN	SCHWARZBECK	NNLK 8129	8129-462	2017.11.08	2018.11.07	☐
AMN	SCHWARZBECK	NNBM8124	8124-509	2017.06.22	2018.06.21	☐
AMN	SCHWARZBECK	NNBM8124	8124-510	2017.06.22	2018.06.21	☐
ISN	TESEQ	ISN T800	34449	2017.06.22	2018.06.21	☐
Shielded Enclosure	ChangNing	CN-130701	130703	N/A	N/A	☒

4.3 Test Enclosure list

Description	Manufacturer	Model	Serial No.	Length	Description	Use
PC	N/A	N/A	N/A	N/A	Special Handled	☐
Laptop	Apple	A1465	N/A	N/A	N/A	☒
Printer	HP	DESKJET 1000	N/A	N/A	N/A	☐
Keyboard	Logitech	Y-BP62a	N/A	N/A	N/A	☐
Mouse	Logitech	M100	N/A	N/A	N/A	☐
USB disk	Kingston	N/A	N/A	N/A	N/A	☐
TF Card	Kingston	N/A	N/A	N/A	N/A	☒
VGA Cable	N/A	N/A	N/A	1.5 m	Shielded with core	☐
HDMI Cable	N/A	N/A	N/A	1.5 m	Shielded with core	☐
DVI Cable	N/A	N/A	N/A	1.5 m	Shielded with core	☐
Coaxial video cable	N/A	N/A	N/A	2.0 m	Shielded with core	☐
Audio Cable	N/A	N/A	N/A	0.5 m	Shielded with core	☐
iPhone	Apple	A1586	N/A	N/A	N/A	☐
Bluetooth Earphone	SAMSUNG	Gear Circle	N/A	N/A	N/A	☒
Wireless Communications Test Set	R&S	CMW500	142028	N/A	Cal. Due 2018.06.11	☒
WIFI Router	TP-LINK	TL-WDR7500	N/A	N/A	N/A	☒
GPS/GLONASS Vector signal generator	R&S	N5172B EXG	N/A	N/A	N/A	☒
Car Battery	Camel	55530	N/A	N/A	12 V/55 Ah	☐
Artificial load	N/A	N/A	N/A	N/A	2.5 Ω /100 W	☐
Artificial load	N/A	N/A	N/A	N/A	5 Ω /100 W	☐
Electronic Load	ITECH	IT8511	N/A	N/A	N/A	☐
USB Cable	N/A	N/A	N/A	1.5 m	Shielded with core	☐
DC Power Supply	ITECH	IT6863A	60001401068 7210006	N/A	N/A	☐
LCD Monitor	SAMSUNG	UA32C4000P	N/A	N/A	N/A	☐
RJ45 Cable	N/A	N/A	N/A	1.5 m	Shielded with core	☐
IC Card	N/A	N/A	N/A	N/A	N/A	☒

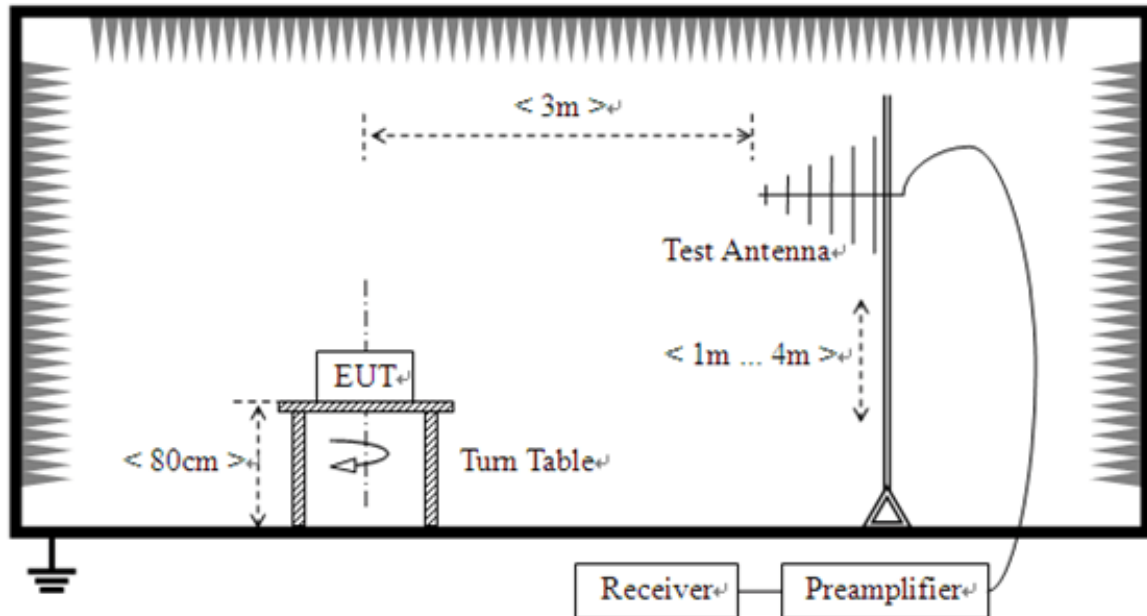
4.4 Test Configurations

Test Configurations (TC) No.	Description
Traffic Test Mode	
TC01	<u>The GSM 850 MHz Test Mode</u> GSM 850 Link + Adapter + USB Cable + Battery + Bluetooth Earphone + Bluetooth Link + WIFI Link + GPS RX
TC02	<u>The EDGE 850 MHz Test Mode</u> EDGE 850 Link + Adapter + USB Cable + Battery + Bluetooth Earphone + Bluetooth Link + WIFI Link + GLONASS RX
TC03	<u>The GSM 1900 Test Mode</u> GSM 1900 Link + Adapter + USB Cable + Battery + Bluetooth Earphone + Bluetooth Link + WIFI Link + GPS RX
TC04	<u>The EDGE 1900 MHz Test Mode</u> EDGE 1900 Link + Adapter + USB Cable + Battery + Bluetooth Earphone + Bluetooth Link + WIFI Link + GLONASS RX
TC05	<u>The WCDMA Band 2 Test Mode</u> WCDMA Band 2 + Adapter + USB Cable + Battery + Bluetooth Earphone + Bluetooth Link + WIFI Link + GPS RX
TC06	<u>The WCDMA Band 5 Test Mode</u> WCDMA Band 2 + Adapter + USB Cable + Battery + Bluetooth Earphone + Bluetooth Link + WIFI Link + GPS RX
TC07	<u>The CDMA 800 MHz Test Mode</u> CDMA 800 MHz + Adapter + USB Cable + Battery + Bluetooth Earphone + Bluetooth Link + WIFI Link + GPS RX
TC08	<u>The CDMA 2000 MHz Test Mode</u> CDMA 800 MHz + Adapter + USB Cable + Battery + Bluetooth Earphone + Bluetooth Link + WIFI Link + GPS RX
TC09	<u>The FDD LTE Band 2 Test Mode</u> LTE Band 2 Link + Adapter + USB Cable + Battery + Bluetooth Earphone + Bluetooth Link + WIFI Link + GLONASS RX
TC10	<u>The FDD LTE Band 4 Test Mode</u> LTE Band 4 Link + Adapter + USB Cable + Battery + Bluetooth Earphone + Bluetooth Link + WIFI Link + GPS RX
TC11	<u>The FDD LTE Band 5 Test Mode</u> LTE Band 5 Link + Adapter + USB Cable + Battery + Bluetooth Earphone + Bluetooth Link + WIFI Link + GPS RX
TC12	<u>The FDD LTE Band 7 Test Mode</u> LTE Band 7 Link + Adapter + USB Cable + Battery + Bluetooth Earphone + Bluetooth Link + WIFI Link + GLONASS RX
TC13	<u>The FDD LTE Band 17 Test Mode</u> LTE Band 17 Link + Adapter + USB Cable + Battery + Bluetooth Earphone + Bluetooth Link + WIFI Link + GLONASS RX

TC14	<u>The FDD LTE Band 41 Test Mode</u> LTE Band 41 Link + Adapter + USB Cable + Battery + Bluetooth Earphone + Bluetooth Link + WIFI Link + GLONASS RX
TC15	<u>The Idle Test Mode</u> GSM 850(Idle) + Adapter + Battery + Bluetooth Earphone + USB Cable
Amusement Test Mode	
TC16	<u>The Camera Test Mode</u> EUT + Adapter + USB Cable + Battery + Bluetooth Earphone + TF Card
TC17	<u>The Video Play Test Mode</u> EUT + Adapter + USB Cable + Battery + Bluetooth Earphone + TF Card
TC18	<u>The USB Test Mode</u> EUT + USB Cable + Battery + Bluetooth Earphone + Laptop+ TF Card
TC19	<u>The NFC Test Mode</u> EUT + Adapter + Battery + USB Cable+ NFC Link+ IC Card

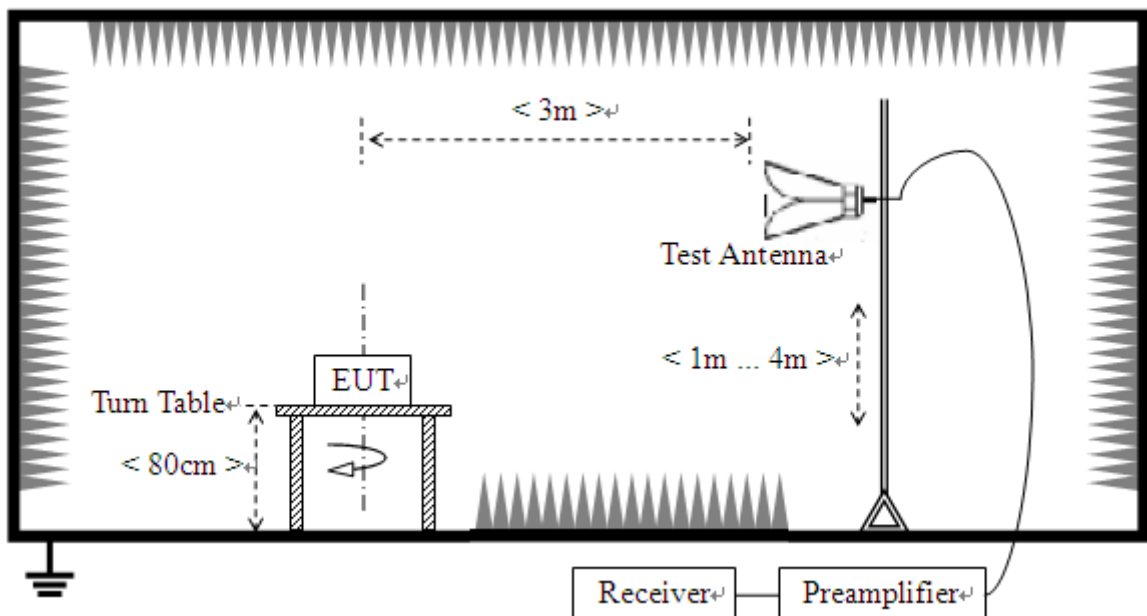
4.5 Test Setups

Test Setup 1



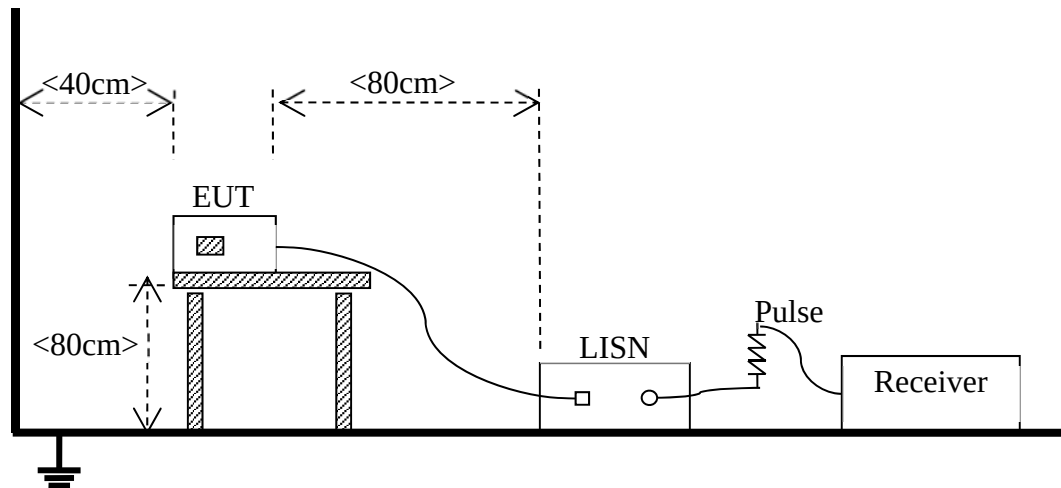
(For Radiated Emission Test (30 MHz-1 GHz))

Test Setup 2



(For Radiated Emission Test (above 1 GHz))

Test Setup 3



(For Conducted Emission, AC Ports Test)

4.6 Test Conditions

Test Case	Test Conditions	
Radiated Emission	Test Env.	NTNV
	Test Setup	Test Setup 1&2
	Test Configuration	TC01~TC19 ^{Note}
Conducted Emission, AC Ports	Test Env.	NTNV
	Test Setup	Test Setup 3
	Test Configuration	TC01~TC19 ^{Note}
Note: Based on client request, all normal using modes of the normal function were tested but only the worst test data of the worst mode is reported by this report. The GSM 850 MHz Test Mode is the worst mode in this report.		

5 TEST ITEMS

5.1 Emission Tests

5.1.1 Radiated Emission

5.1.1.1 Limit

Frequency range (MHz)	Class B (at 3 m)		Class B (at 10 m)	Class A (at 10 m)	
	Field Strength (μV/m)	Field Strength (dBμV/m)	Field Strength (dBμV/m)	Field Strength (μV/m)	Field Strength (dBμV/m)
30 - 88	100	40	30	90	39
88 - 216	150	43.5	33.5	150	43.5
216 - 960	200	46	36	210	46.4
Above 960	500	54	44	300	49.5

NOTE:

- 1) Field Strength (dBμV/m) = 20*log [Field Strength (μV/m)].
- 2) In the emission tables above, the tighter limit applies at the band edges.
- 3) The limits using ANSI C63.4.

5.1.1.2 Test Setup

Refer to 4.5 section (test setup 1 to test setup 2) for radiated emission test, the photo of test setup please refer to ANNEX B.

5.1.1.3 Test Procedure

The test employing the methods of measurement described in the publication referenced in Section 3(b) (ANSI C63.4);

All Spurious Emission tests were performed in X, Y, Z axis direction. And only the worst axis test condition was recorded in this test report.

An initial pre-scan was performed in the chamber using the EMI Receiver in peak detection mode. Quasi-peak measurements were conducted based on the peak sweep graph. The EUT was measured by Bi-Log antenna with 2 orthogonal polarities.

5.1.1.4 Test Result

Please refer to ANNEX A.1.

5.1.2 Conducted Emission

5.1.2.1 Test Limit

Frequency range (MHz)	Class A	
	Quasi-peak (dB μ V)	Average (dB μ V)
0.15 - 0.50	79	66
0.50 - 30	73	60

Frequency range (MHz)	Class B	
	Quasi-peak (dB μ V)	Average (dB μ V)
0.15 - 0.50	66 to 56	56 to 46
0.50 - 5	56	46
5 - 30	60	50

NOTE:

- 1) The lower limit shall apply at the band edges.
- 2) The limit decreases linearly with the logarithm of the frequency in the range 0.15 - 0.50 MHz.
- 3) The limit using ANSI C63.4.

5.1.2.2 Test Setup

Refer to 4.5 section test (test setup 3) for conducted emission, the photo of test setup please refer to ANNEX B.

5.1.2.3 Test Procedure

The test employing the methods of measurement described in the publication referenced in Section 3(b) (ANSI C63.4);

The EUT is connected to the power mains through a LISN which provides 50 Ω /50 μ H of coupling impedance for the measuring instrument. The test frequency range is from 150 kHz to 30 MHz. The maximum conducted interference is searched using Peak (PK), Quasi-peak (QP) and Average (AV) detectors; the emission levels that are more than the AV and QP limits, and that have narrow margins from the AV and QP limits will be re-measured with AV and QP detectors. Tests for both L phase and N phase lines of the power mains connected to the EUT are performed.

Devices subject to Part 15 must be tested for all available U.S. voltages and frequencies (such as a nominal 120 VAC, 50/60 Hz and 240 VAC, 50/60 Hz) for which the device is capable of operation. A device rated for 50/60 Hz operation need not be tested at both frequencies provided the radiated and line conducted emissions are the same at both frequencies.

5.1.2.4 Test Result

Please refer to ANNEX A.2.

ANNEX A TEST RESULTS

A.1 Radiated Emission

Note 1: The symbol of “--” in the table which means not application.

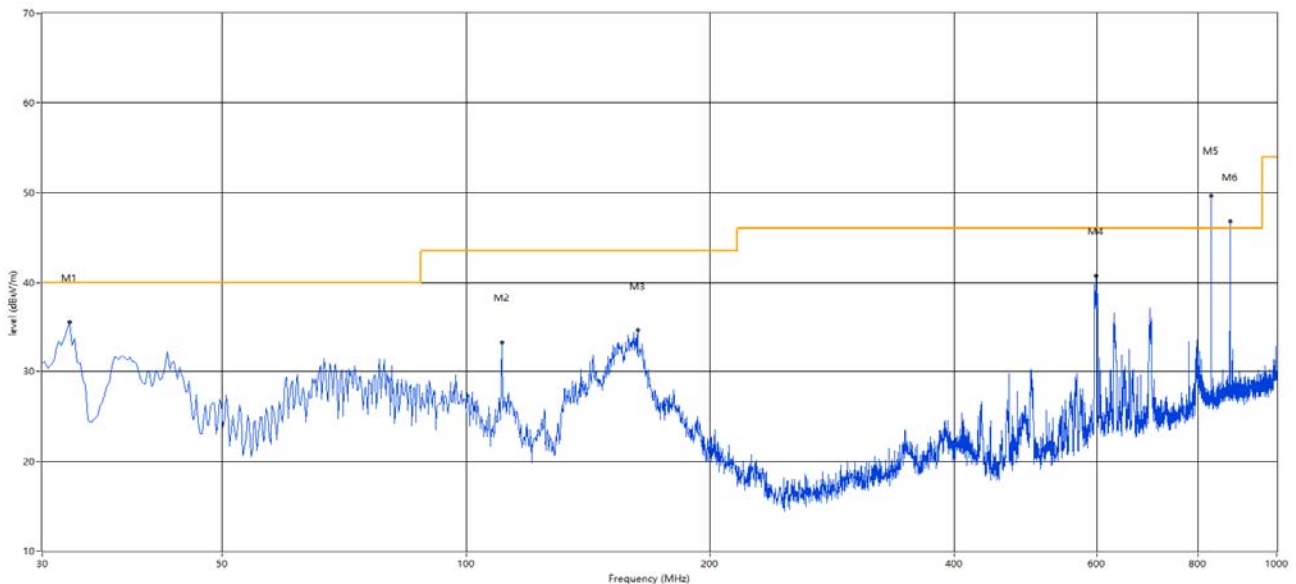
Note 2: For the test data above 1 GHz, according the ANSI C63.4-2014, where limits are specified for both average and peak (or quasi-peak) detector functions, if the peak (or quasi-peak) measured value complies with the average limit, it is unnecessary to perform an average measurement.

Note 3: This frequency which near 850 MHz with circle should be ignored because they are MS and SS carrier frequency. The marked spikes near 2400 MHz with circle should be ignored because they are Bluetooth carrier frequency.

Test Data and Plots

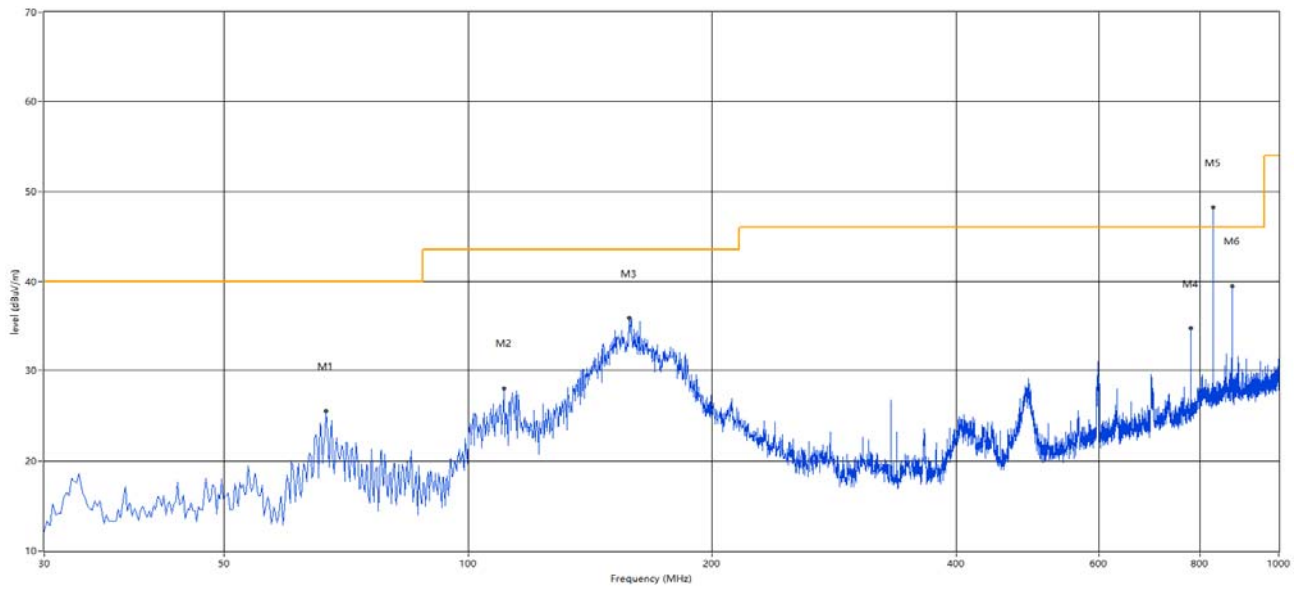
The GSM 850 MHz Test Mode

A.1.1 Test Antenna Vertical, 30 MHz – 1 GHz



Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
32.424	35.49	--	--	-28.82	--	40.0	--	4.51	267.60	100	Vertical	Pass
110.732	33.19	--	--	-28.44	--	43.5	--	10.31	227.40	100	Vertical	Pass
162.857	34.55	--	--	-30.94	--	43.5	--	8.95	43.50	100	Vertical	Pass
598.278	40.71	--	--	-18.60	--	46.0	--	5.29	359.10	100	Vertical	Pass
830.777	49.66	--	--	-13.16	--	46.0	--	-3.66	158.40	100	Vertical	N.A
875.871	46.77	--	--	-13.29	--	46.0	--	-0.77	63.80	100	Vertical	N.A

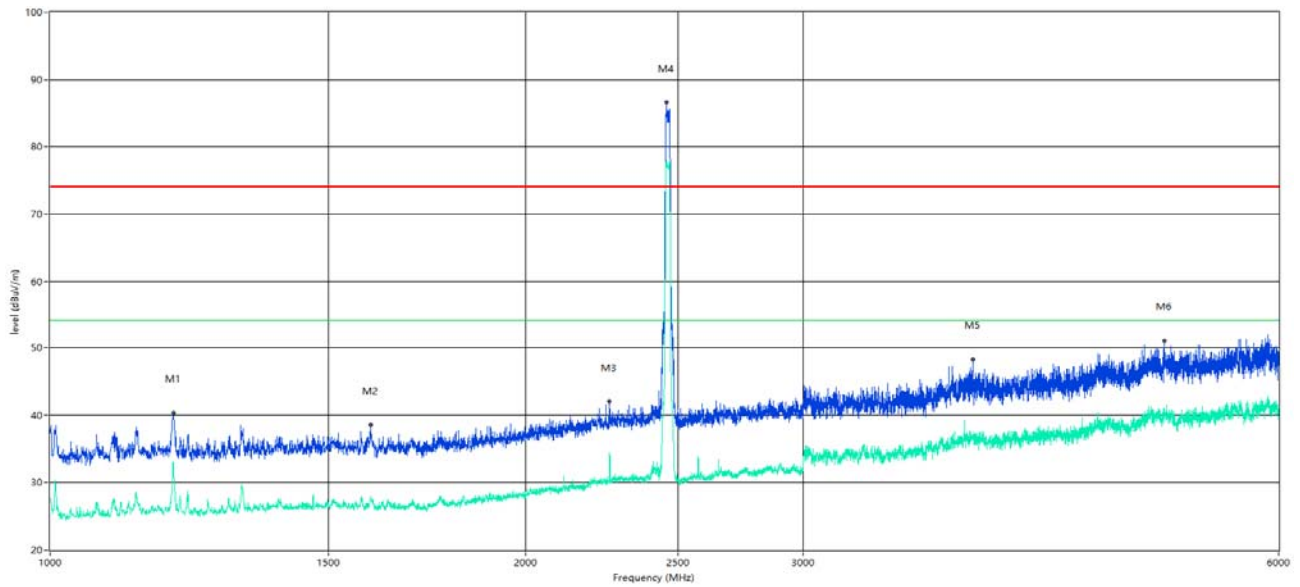
A.1.2 Test Antenna Horizontal, 30 MHz – 1 GHz



Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
66.851	25.47	--	--	-29.51	--	40.0	--	14.53	95.10	100	Horizontal	Pass
110.732	28.03	--	--	-28.44	--	43.5	--	15.47	0.00	100	Horizontal	Pass
158.008	35.83	--	--	-31.13	--	43.5	--	7.67	92.10	100	Horizontal	Pass
779.865	34.67	--	--	-15.45	--	46.0	--	11.33	95.10	100	Horizontal	Pass
830.777	48.24	--	--	-13.16	--	46.0	--	-2.24	0.40	100	Horizontal	N.A
875.871	39.48	--	--	-13.29	--	46.0	--	6.52	152.40	100	Horizontal	N.A

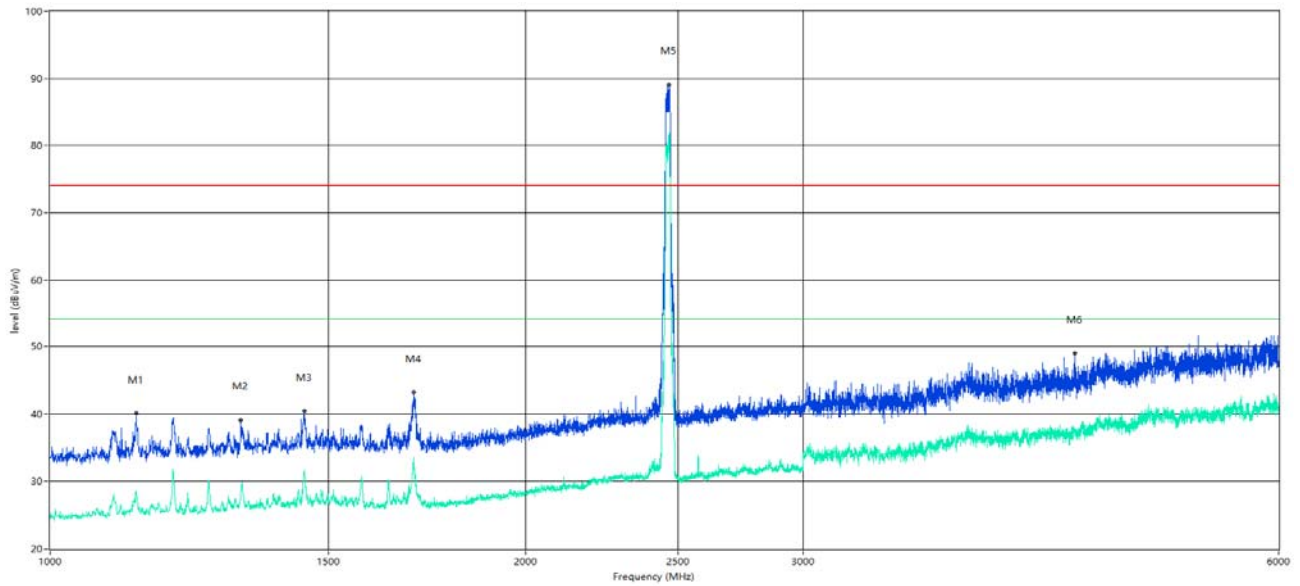
Test Data and Plots (Above 1 GHz)

A.1.3 Test Antenna Vertical, 1 GHz – 6 GHz



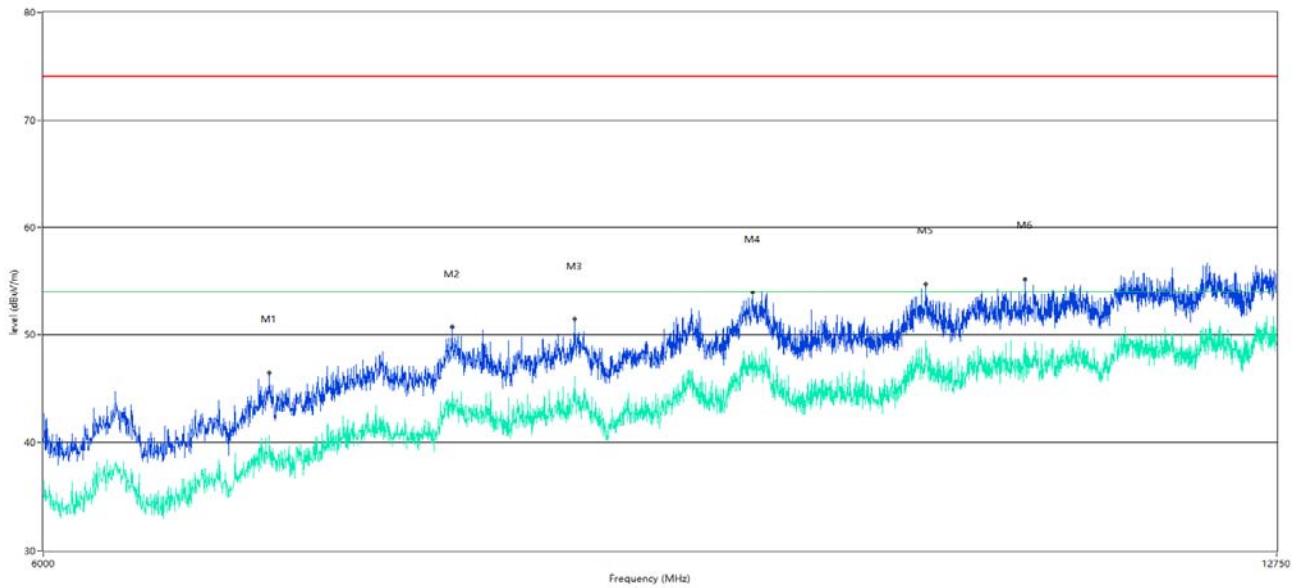
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
1196.951	40.34	--	33.0	-15.07	74.0	--	54.0	21.00	326.80	100	Vertical	Pass
1595.351	38.60	--	27.9	-15.53	74.0	--	54.0	26.10	355.70	100	Vertical	Pass
2261.685	42.03	--	34.4	-10.02	74.0	--	54.0	19.60	352.50	100	Vertical	Pass
2458.135	86.55	--	77.9	-9.19	74.0	--	54.0	-23.90	317.40	100	Vertical	NA
3839.790	48.32	--	37.0	-2.86	74.0	--	54.0	17.00	352.50	100	Vertical	Pass
5076.981	51.09	--	41.0	1.68	74.0	--	54.0	13.00	317.40	100	Vertical	Pass

A.1.4 Test Antenna Horizontal, 1 GHz – 6 GHz



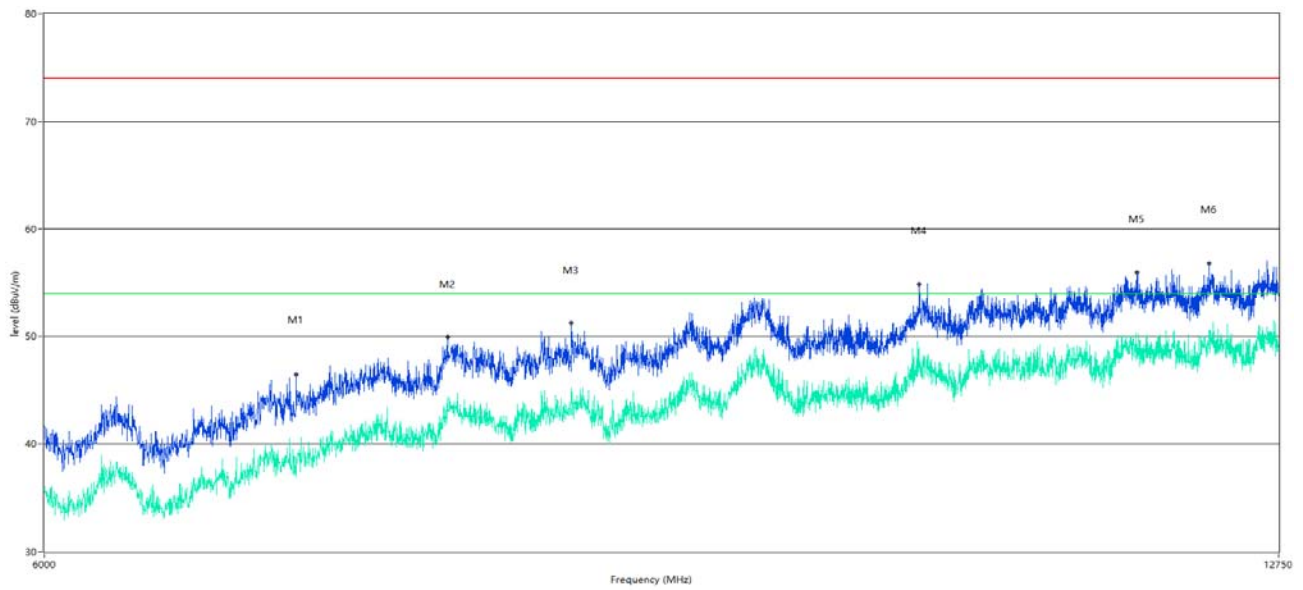
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
1133.967	40.09	--	28.2	-14.81	74.0	--	54.0	25.80	1.10	100	Horizontal	Pass
1320.920	39.08	--	28.0	-15.44	74.0	--	54.0	26.00	10.60	100	Horizontal	Pass
1449.888	40.41	--	31.2	-15.14	74.0	--	54.0	22.80	1.10	100	Horizontal	Pass
1700.325	43.15	--	32.2	-15.30	74.0	--	54.0	21.80	39.20	100	Horizontal	Pass
2467.133	89.07	--	81.7	-9.10	74.0	--	54.0	-27.70	36.00	100	Horizontal	N.A
4458.385	48.93	--	37.6	-1.71	74.0	--	54.0	16.40	36.00	100	Horizontal	Pass

A.1.5 Test Antenna Vertical, 6 GHz – 12.75 GHz



Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
6889.090	46.44	--	40.7	-10.93	74.0	--	54.0	13.30	335.70	100	Vertical	Pass
7703.949	50.71	--	44.7	-7.74	74.0	--	54.0	9.30	16.80	100	Vertical	Pass
8302.862	51.41	--	46.1	-6.80	74.0	--	54.0	7.90	151.40	100	Vertical	Pass
9257.748	53.98	--	47.5	-4.29	74.0	--	54.0	6.50	151.40	100	Vertical	Pass
10288.553	54.76	--	48.6	-2.16	74.0	--	54.0	5.40	8.60	100	Vertical	Pass
10931.330	55.21	--	49.2	-1.87	74.0	--	54.0	4.80	356.40	100	Vertical	Pass

A.1.6 Test Antenna Horizontal, 6 GHz – 12.75 GHz

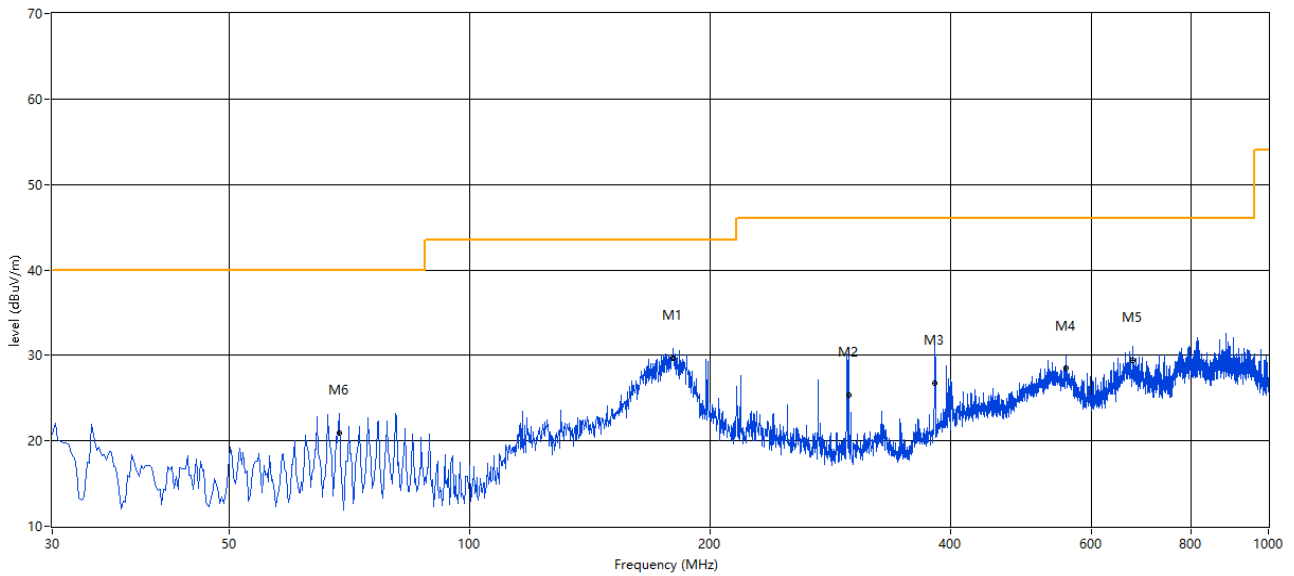


Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
6998.750	46.42	--	38.8	-11.71	74.0	--	54.0	15.20	0.00	100	Horizontal	Pass
7675.269	49.93	--	44.4	-8.21	74.0	--	54.0	9.60	242.20	100	Horizontal	Pass
8277.556	51.20	--	45.2	-6.94	74.0	--	54.0	8.80	129.10	100	Horizontal	Pass
10236.253	54.88	--	48.9	-2.23	74.0	--	54.0	5.10	82.90	100	Horizontal	Pass
11695.576	55.95	--	48.1	-0.69	74.0	--	54.0	5.90	339.00	100	Horizontal	Pass
12221.945	56.81	--	50.6	-0.34	74.0	--	54.0	3.40	250.60	100	Horizontal	Pass

Test Data and Plots

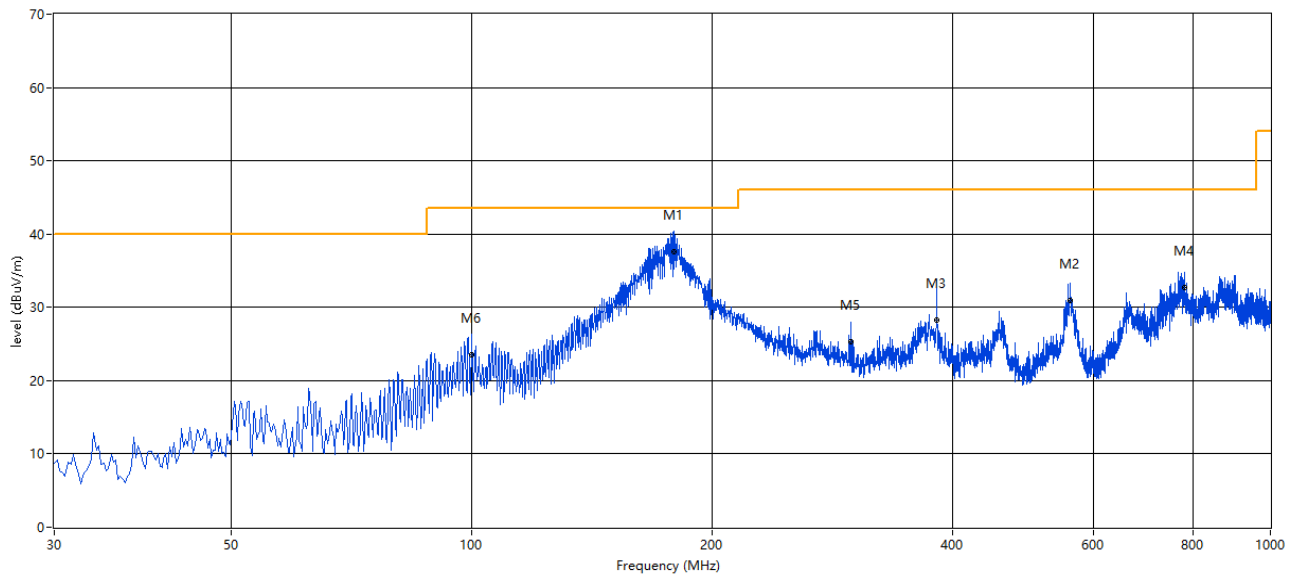
The USB Test Mode

A.1.7 Test Antenna Vertical, 30 MHz – 1 GHz



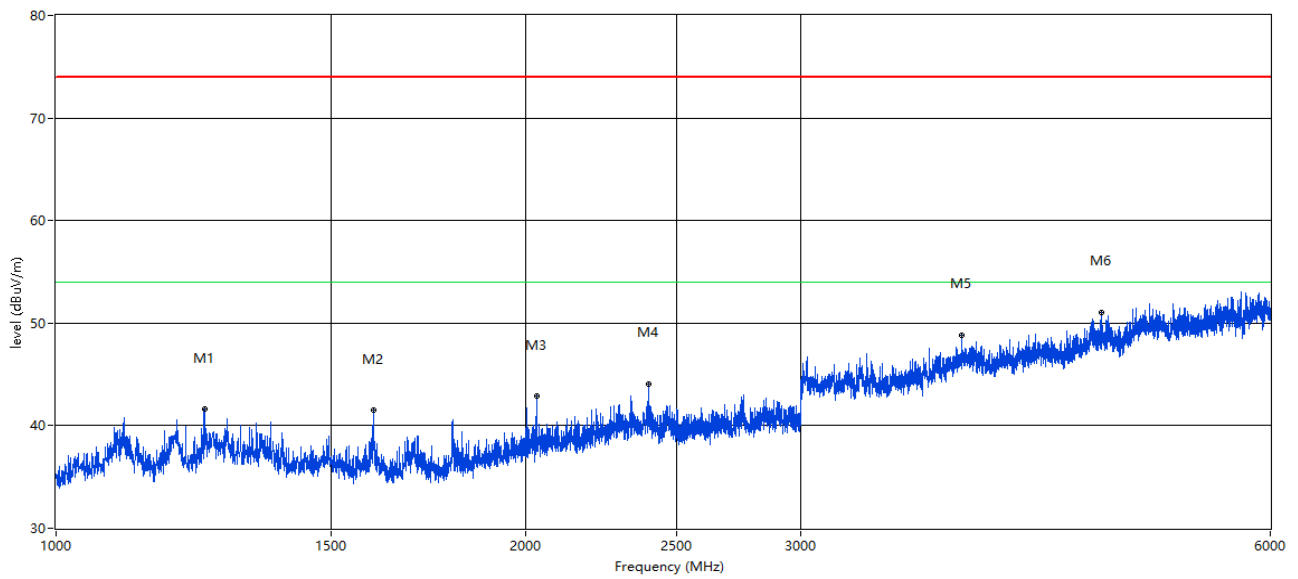
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
179.870	32.89	29.68	--	-30.57	--	43.5	--	13.82	101.80	220	Vertical	Pass
297.896	30.73	25.40	--	-26.70	--	46.0	--	20.60	133.40	200	Vertical	Pass
382.264	31.36	26.69	--	-24.61	--	46.0	--	19.31	94.60	100	Vertical	Pass
557.548	29.93	28.52	--	-20.38	--	46.0	--	17.48	5.20	200	Vertical	Pass
677.313	31.10	29.43	--	-17.67	--	46.0	--	16.57	122.10	200	Vertical	Pass
68.548	23.13	20.86	--	-30.34	--	40.0	--	19.14	273.00	100	Vertical	Pass

A.1.8 Test Antenna Horizontal, 30 MHz – 1 GHz



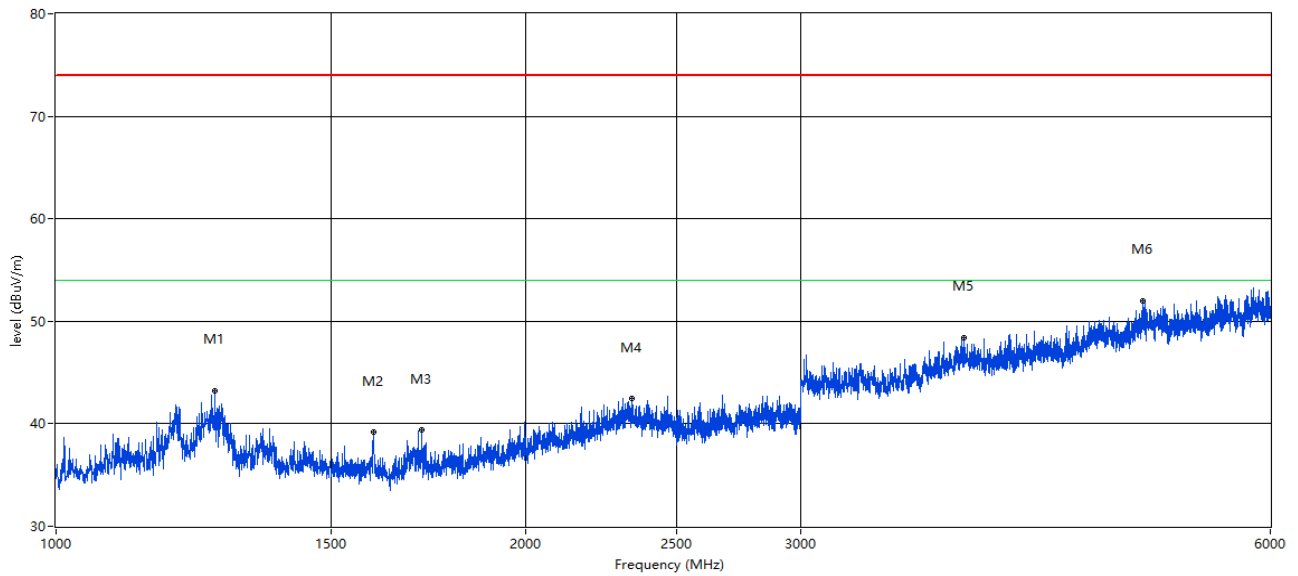
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
179.013	40.32	37.57	--	-30.63	--	43.5	--	5.93	52.40	112	Horizontal	Pass
561.185	33.33	30.92	--	-20.28	--	46.0	--	15.08	360.00	200	Horizontal	Pass
381.780	32.54	28.28	--	-24.62	--	46.0	--	17.72	189.90	100	Horizontal	Pass
781.077	34.80	32.76	--	-15.84	--	46.0	--	13.24	52.20	100	Horizontal	Pass
298.623	28.00	25.30	--	-26.70	--	46.0	--	20.70	80.70	100	Horizontal	Pass
100.065	26.32	23.57	--	-28.73	--	43.5	--	19.93	347.30	200	Horizontal	Pass

A.1.9 Test Antenna Vertical, 1 GHz – 6 GHz



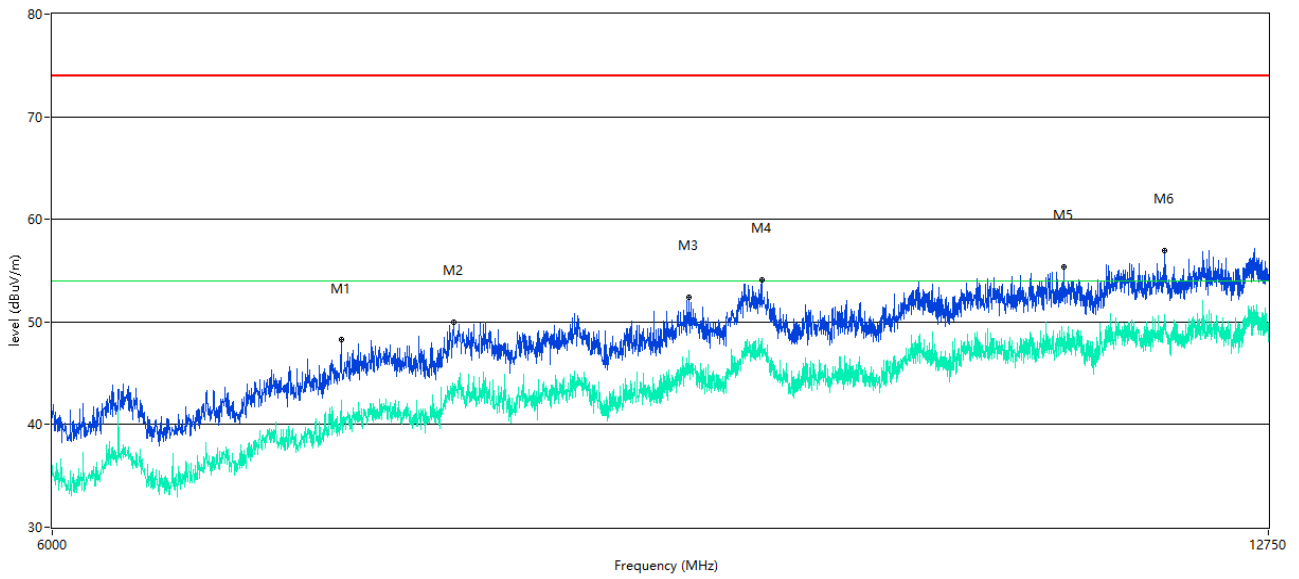
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
1244.439	41.63	--	37.7	-15.48	74.0	--	54.0	16.30	111.00	100	Vertical	Pass
1596.851	41.57	--	39.5	-15.50	74.0	--	54.0	14.50	73.20	100	Vertical	Pass
2031.242	42.89	--	40.8	-12.21	74.0	--	54.0	13.20	95.40	100	Vertical	Pass
2397.651	44.11	--	41.2	-9.72	74.0	--	54.0	12.80	79.60	100	Vertical	Pass
3807.548	48.78	--	46.8	-2.51	74.0	--	54.0	7.20	99.60	100	Vertical	Pass
4679.580	51.06	--	46.9	-0.12	74.0	--	54.0	7.10	59.60	100	Vertical	Pass

A.1.10 Test Antenna Horizontal, 1 GHz – 6 GHz



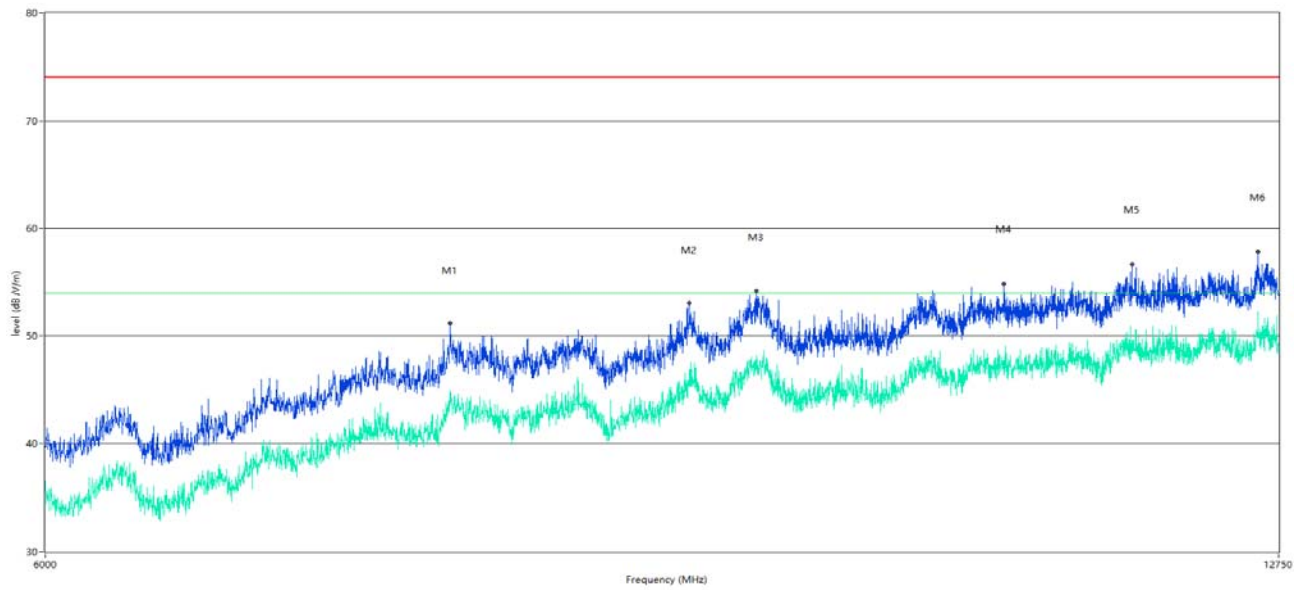
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
1264.434	43.19	--	41.6	-15.49	74.0	--	54.0	12.40	51.90	100	Horizontal	Pass
1598.350	39.17	--	36.0	-15.48	74.0	--	54.0	18.00	58.10	100	Horizontal	Pass
1715.321	39.44	--	36.0	-15.18	74.0	--	54.0	18.00	64.50	100	Horizontal	Pass
2338.665	42.45	--	40.5	-9.83	74.0	--	54.0	13.50	315.10	100	Horizontal	Pass
3818.045	48.38	--	46.1	-3.26	74.0	--	54.0	7.90	179.70	100	Horizontal	Pass
4971.257	52.01	--	49.2	0.94	74.0	--	54.0	4.80	234.30	100	Horizontal	Pass

A.1.11 Test Antenna Vertical, 6 GHz – 12.75 GHz



Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
7175.894	48.27	--	42.4	-10.38	74.0	--	54.0	11.60	12.30	100	Vertical	Pass
7693.827	50.02	--	42.6	-7.86	74.0	--	54.0	11.40	287.70	100	Vertical	Pass
8901.775	52.45	--	47.2	-4.90	74.0	--	54.0	6.80	129.40	100	Vertical	Pass
9313.422	54.15	--	48.4	-4.34	74.0	--	54.0	5.60	163.00	100	Vertical	Pass
11229.943	55.40	--	49.0	-1.80	74.0	--	54.0	5.00	62.40	100	Vertical	Pass
11958.760	57.01	--	50.7	-0.87	74.0	--	54.0	3.30	150.40	100	Vertical	Pass

A.1.12 Test Antenna Horizontal, 6 GHz – 12.75 GHz



Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
7685.391	51.12	--	45.0	-8.01	74.0	--	54.0	9.00	218.50	100	Horizontal	Pass
8893.339	52.99	--	46.8	-5.09	74.0	--	54.0	7.20	13.90	100	Horizontal	Pass
9267.871	54.24	--	48.2	-4.13	74.0	--	54.0	5.80	330.60	100	Horizontal	Pass
10781.180	54.90	--	47.8	-1.76	74.0	--	54.0	6.20	22.30	100	Horizontal	Pass
11656.773	56.72	--	49.5	-0.87	74.0	--	54.0	4.50	189.30	100	Horizontal	Pass
12589.728	57.87	--	52.2	0.20	74.0	--	54.0	1.80	247.40	100	Horizontal	Pass

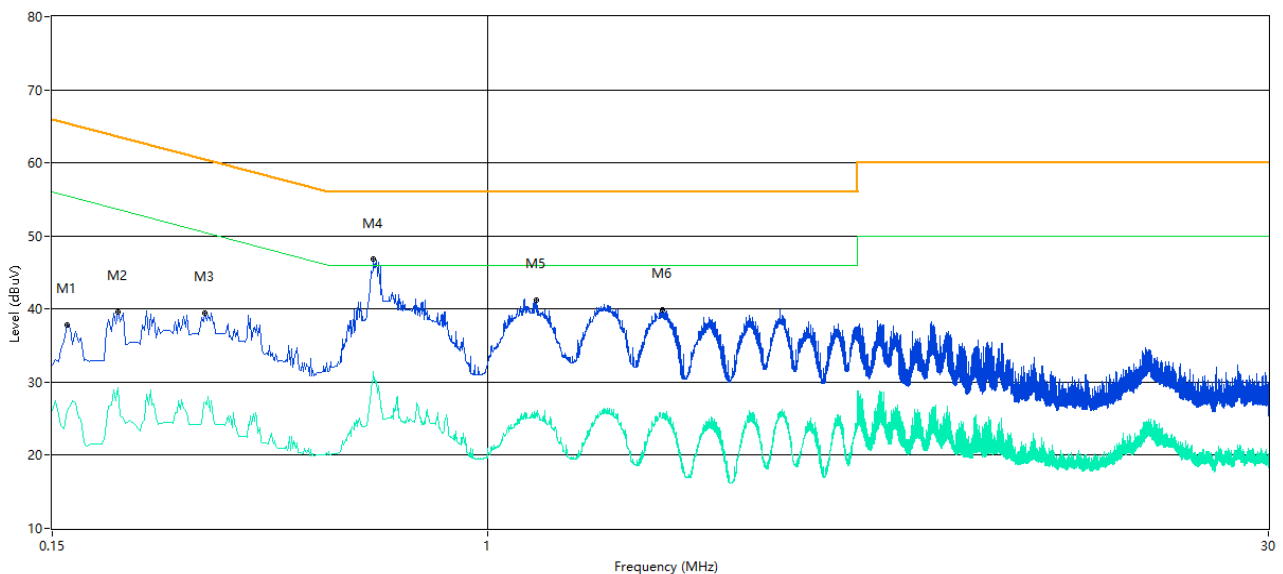
A.2 Conducted Emission

Note: Devices subject to Part 15 must be tested for all available U.S. voltages and frequencies (such as a nominal 120 VAC, 50/60 Hz and 240 VAC, 50/60 Hz) for which the device is capable of operation. So, The configuration 120 VAC, 60 Hz and 240 VAC, 50 Hz were tested respectively, but only the worst configuration (120 VAC, 60 Hz) shown here.

Test Data and Plots

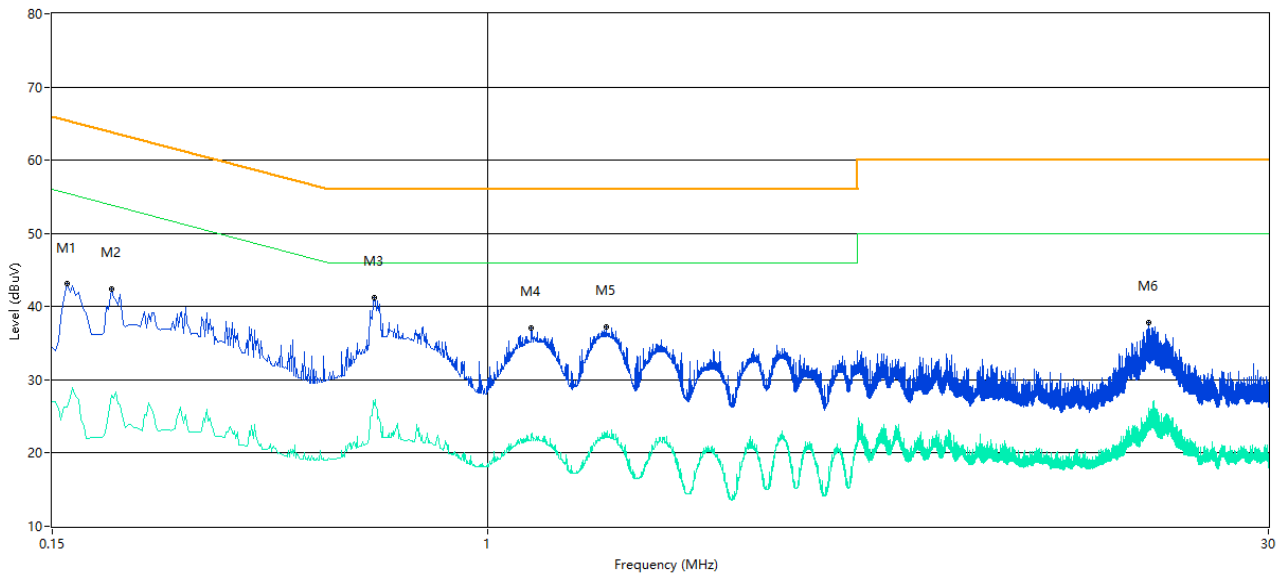
The GSM850 Test Mode

A.2.1 L Phase



Frequency (MHz)	Peak Level (dBuV)	Q-peak Level (dBuV)	Average Level (dBuV)	Factor (dB)	QP Limit (dBuV)	AV Limit (dBuV)	Margin (dB)	Line	Verdict
0.160	44.81	36.19	27.87	10.01	65.5	55.5	27.63	L Line	Pass
0.200	40.83	37.00	28.03	10.01	63.6	53.6	25.57	L Line	Pass
0.292	40.96	37.08	27.37	10.01	60.5	50.5	23.13	L Line	Pass
0.608	47.09	43.96	30.92	10.02	56.0	46.0	12.04	L Line	Pass
1.238	41.89	37.45	25.49	10.04	56.0	46.0	18.55	L Line	Pass
2.140	40.51	36.15	25.60	10.07	56.0	46.0	19.85	L Line	Pass

A.2.2 N Phase

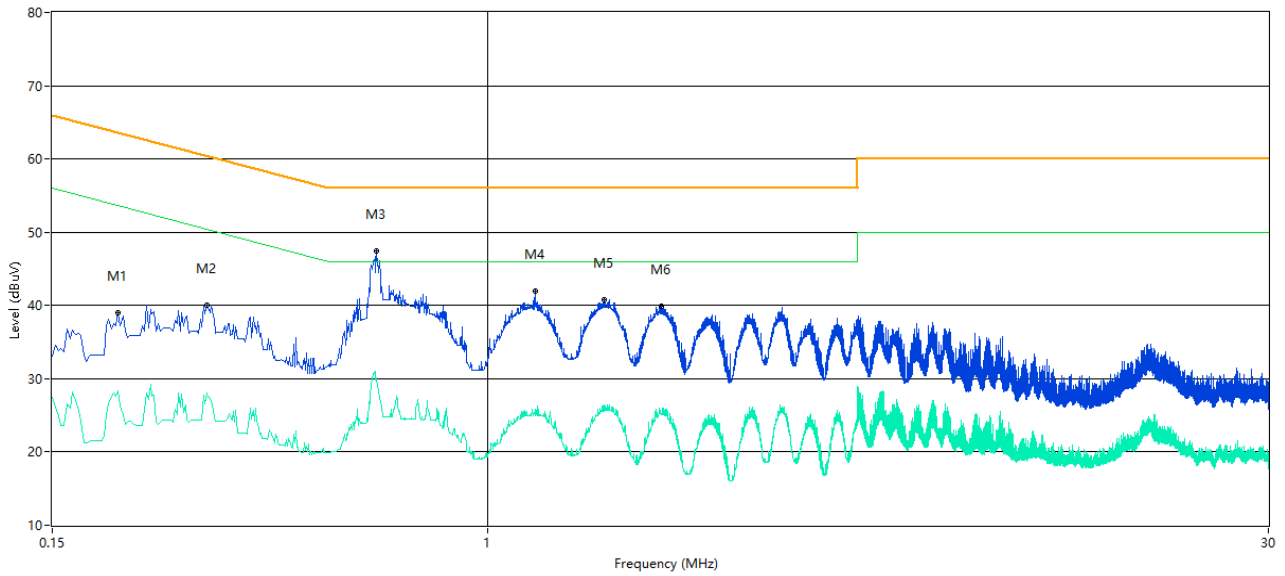


Frequency (MHz)	Peak Level (dBuV)	Q-peak Level (dBuV)	Average Level (dBuV)	Factor (dB)	QP Limit (dBuV)	AV Limit (dBuV)	Margin (dB)	Line	Verdict
0.160	46.84	38.76	26.46	10.01	65.5	55.5	26.74	N Line	Pass
0.194	45.31	38.64	26.81	10.01	63.9	53.9	25.26	N Line	Pass
0.610	42.65	38.72	27.20	10.02	56.0	46.0	17.28	N Line	Pass
1.210	37.20	32.67	22.30	10.04	56.0	46.0	23.33	N Line	Pass
1.676	40.55	36.10	24.71	10.06	56.0	46.0	19.90	N Line	Pass
17.794	36.46	31.28	22.21	10.59	60.0	50.0	27.79	N Line	Pass

Test Data and Plots

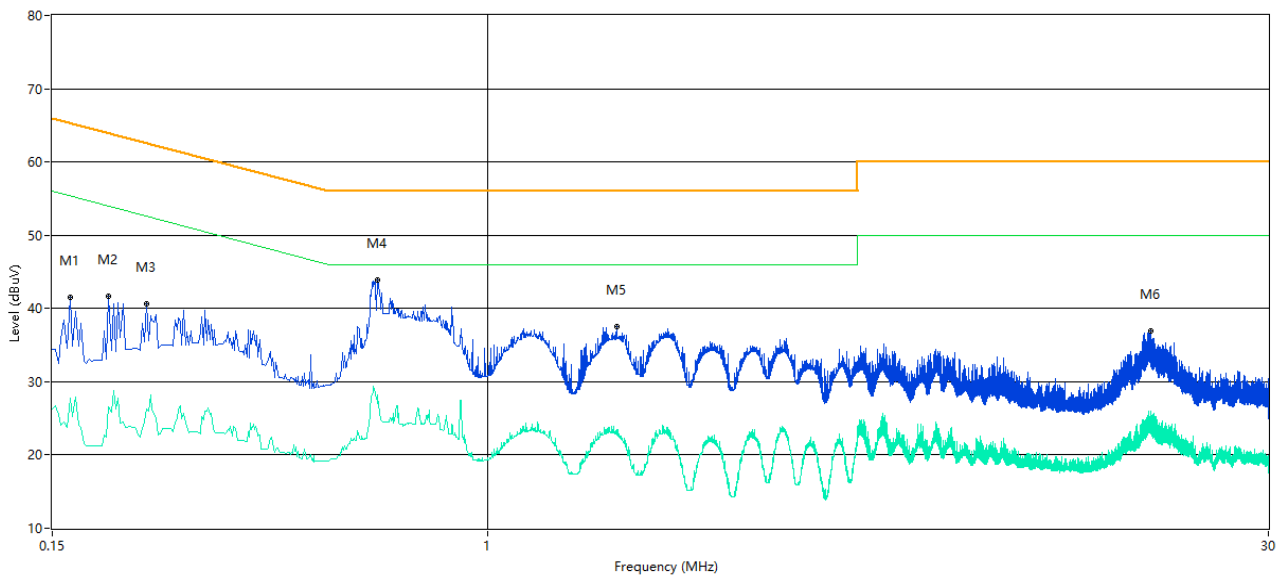
The USB Test Mode

A.2.3 L Phase



Frequency (MHz)	Peak Level (dBuV)	Q-peak Level (dBuV)	Average Level (dBuV)	Factor (dB)	QP Limit (dBuV)	AV Limit (dBuV)	Margin (dB)	Line	Verdict
0.200	40.59	36.95	28.00	10.01	63.6	53.6	25.60	L Line	Pass
0.294	41.30	36.87	27.38	10.01	60.4	50.4	23.02	L Line	Pass
0.616	47.62	43.97	29.95	10.02	56.0	46.0	12.03	L Line	Pass
1.228	41.94	37.76	25.33	10.04	56.0	46.0	18.24	L Line	Pass
1.658	41.77	37.20	25.49	10.06	56.0	46.0	18.80	L Line	Pass
2.132	39.98	35.67	24.66	10.07	56.0	46.0	20.33	L Line	Pass

A.2.4 N Phase



Frequency (MHz)	Peak Level (dBuV)	Q-peak Level (dBuV)	Average Level (dBuV)	Factor (dB)	QP Limit (dBuV)	AV Limit (dBuV)	Margin (dB)	Line	Verdict
0.162	45.81	37.78	27.74	10.01	65.4	55.4	27.62	N Line	Pass
0.192	45.13	37.46	25.65	10.01	63.9	53.9	26.44	N Line	Pass
0.226	41.08	36.54	26.51	10.01	62.6	52.6	26.06	N Line	Pass
0.618	43.56	39.71	26.95	10.02	56.0	46.0	16.29	N Line	Pass
1.752	37.76	33.42	23.41	10.06	56.0	46.0	22.58	N Line	Pass
17.972	36.94	29.44	21.06	10.60	60.0	50.0	28.94	N Line	Pass

ANNEX B TEST SETUP PHOTOS

Please refer the document “BL-EC17C0360-AE.PDF”.

ANNEX C EUT EXTERNAL PHOTOS

Please refer the document “BL-EC17C0360-AW.PDF”.

ANNEX D EUT INTERNAL PHOTOS

Please refer the document “BL-EC17C0360-AI.PDF”.

--END OF REPORT--